FORM PTO-1449

INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET
033035 M 0341

APPLICANT:
Kensaku MOTOI

FILING DATE
October 24, 2003

SERIAL NO. 10/6 1/540
10/691,569

GROUP ART UNIT
1722

#### U.S. PATENT DOCUMENTS

			U.S. PATENT				
*Examiner's Initials		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE, IF APPROPRIATE
/MS/	AA	5,962,915	October 5, 1999	Young et al.	1		
/MS/	AB	6,270,569	August 7, 2001	Shibata et al.			
	AC						
	AD			·			
	AF						
	AG						
	AH					i	
	Al						
	AJ				1		
	AK						

## FOREIGN PATENT DOCUMENTS

*Examiner's Initials		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSL YES	ATION NO
	AL							
	AM				1			
	AN							
	AO				1			
	AP							

OTHER INFORMATION (Including Author, Title, Date, Pertinent Pages, Etc.)

MS	AQ Copy of Office Action dated September 19, 2006 in Application No. 10/691				
	AR				
EXAMINER:			DATE CONSIDERED:		
	/M	atthew Song/	05/22/2007		

FORM PTO-1449  INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET 33035M0341	SERIAL NO. 10/691,540
	Applicant Kensaku l	Viotoki, et al.
	FILING DATE October 24, 2003	GROUP ART UNIT 1765

## U.S. PATENT DOCUMENTS

*Examiner's Initials		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE, IF APPROPRIATE
M	AA	5,970,314	10/19/99	Okahisa , et al.	_		
M	AB	5,962,875	10/5/99	Motoki, et al.		_	
M3	AC	5,834,325	11/10/98	Motoki, et al.		_	

#### FOREIGN PATENT DOCUMENTS

*Examiner's Initials		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSL/ YES	ATION NO
MS	AD	WO 96/41906	12/27/96	PCT	_		~	<del></del>
iM>	AE	EP 0 801 156	10/15/97	EPO			/	
M>	AF	EP 0 810 674	12/3/97	EPO			/	

OTHER INFORMATION (Including Author, Title, Date, Pertinent Pages, Etc.)

	OTHER INFORMATION (Including Author, Title, Date, Pertinent Pages, Etc.)
	Masaki Nagahara, et al., "Selective Growth of Cubic GaN in Small Areas on Patterned
	GaAs (100) Substrates by Metalorganic Vapor Phase Epitaxy", Japanese Journal of
MS	Applied Physics, Publication Office Japanese Journal of Applied Physics, Vol. 33, No.
	1B, Part 1, (1994), pp. 694-697, XP000596419
	AH X. Li, et al., "Characteristics of GaN Stripes Grown by Selective-Area Metalorganic
MS	Chemical Vapor Deposition", Journal of Electronic Materials, Vol. 26, No. 3, (1996), pp.
	306-310, XP009004611
	Database Inspec 'Online! Institute of Electrical Engineers, Stevenage, GB; Matsushima
	H. et al., "Sub-micron fine structure of GaN by metalorganic vapor phase epitaqxy
MS	(MOVPE) selective area growth (SAG) and buried structure by epitaxial lateral
1-1-	overgrowth (ELO)", Database accession no. 6037425 XP-002268861
	Database Inspec 'Online! Institute of Electrical Engineers, Stevenage, GB; Shibata T et
8.6	al., "Hybride vapor-phase epitaxy growth of high-quality GaN bulk single crystal by
MS	epitaxial lateral overgrowth", Database accession no. 6037423 XP-002268862
	Database Inspec 'Online! Institute of Electrical Engineers, Stevenage, GB; Sasaoka C et
MS	al., "High-quality InGaN MQW on low-dislocation-density GaN substrate grown by
V	hydride vapor-phase epitaxy", Database accession no. 6037422 XP-002268863 1999
EXAMINER:	DATE CONSIDERED:

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449	ATTY. DOCKET NO. 33035M0341  SERIAL NO. To Be Assigned		
INFORMATION DISCLOSURE STATEMENT	APPLICANTS: Kensaku Motoki, et al.		
(Use several sheets if necessary)	FILING DATE Herewith	GROUP ART UNIT To Be Assigned	

**U.S. Patent Documents** 

Examiner Initials		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE, IF APPROPRIATE
W>	AA	4,727,047	2/1988	Bozler, et al.			
1	AB	6,225,650	5/2001	Tadatomo et al.			
	AC	5,843,227	12/1998	Kimura et al.			
	AD	5,846,609	12/1998	Shiralagi			
	AE	6,087,681	7/2000	Shakuda			
	AF	6,096,130	8/2000	Kimura			
WJ	AG	6,156,581	12/2000	Vaudo et al.			

# FOREIGN PATENT DOCUMENTS

*Examiner's Initials		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO
Wa	AD	09-194299	7/29/97	Japan			Abstract
1	AE	8-116090	5/7/96	Japan			Abstract
	AF	9-255496	9/30/97	Japan			Abstract
	AG	7-273048	10/20/95	Japan			Abstract
	AH	51-50899	5/4/76	Japan			Х
	AI	10-265297	10/6/98	Japan			Abstract
	AJ	10-312971	11/24/98	Japan			Abstract
	AK	10-326751	12/8/98	Japan			Abstract
	AL	10-321529	12/4/98	Japan	45		X
M	AM	09-255496	9/30/97	Japan			Abstract

OTHER INFORMATION (Including Author, Title, Date, Pertinent Pages, Etc.)

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EXAMINER Must	: <u>A</u>	DATE CONSID	ERED
*EXAMINER: Initial if refere	nce considered, whether or not citat		e with MPEP 609; Draw line through citation
if not in conformance and not	considered. Include conviof this for	rm with next commu	nication to applicant

FORM PTO-1449  INFORMATION DISCLOSURE STATEMENT						ATTY. DOCKET NO. 33035M0341			SERIAL NO. To Be Assigned			
						APPLICANTS: Kensaku Motoki, et al.						
	FILING DATE Herewith			GROUP ART UNIT To Be Assigned								
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	AB											
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	AD				<del></del>			L		<u> </u>		
	, T			I (Including Auth		Date, Pertir	ent Page	es, Etc.	)			
MZ	AE	Chinese Office Action mailed June 20, 2003.										
	AF	U. Akira et al. "Thick GaN Epitaxial Growth With Low Dislocation Density by Hydride Vapor Phase Epitaxy" Japanese Journal of Applied Physics, 15 July 1997, Part. 2, Vol. 36, No. 7B, pp. L899-L902.										
	AG	S. Akira et al. "Defect Structure in Selectively Grown GaN Films With Low Threading Dislocation Density" Applied Physics Letters, 20 October 1997, Vol. 71, No. 16, pp. 2259-2261.										
	AH	H. Shima et al. "Selective Growth of GaN on Submicron Pattern by MOVPE (in Japanese)" Technical Report of IEICE, Vol. 97, No. 61, 23 May 1997 (Tokyo), pp. 41-46.										
	AI	T. Shibata et al. "Preparation of High-Quality GaN Bulk Single Crystal by Selective HVPl Growth (in Japanese)", Technical Report of IEICE, Vol. 97, No. 61, 23 May 1997 (Tokyopp. 35-40.								ve HVPE (Tokyo),		
	AJ	K. Shota et al. "Fabrication of GaN Hexagonal Pyramids on Dot-Patterned GaN/Sapphire Substrates Via Selective Metalorganic Vapor Phase Epitaxy" Japanese Journal of Applied Physics, 15 September 1995, Part 2, Vol. 34, No. 9B, pp. L1184-L1186.										
W	AK	International Preliminary Examination Report (PCT/IPEA/409) (translated) for J PCT/JP98/04908.										
	AL	International Search Report for PCT/JP98/04908.										
	AM	Cover page of	WO99/	23693.	<b>199</b> A	<b>~</b> )	<del></del>					
	AN	Forms PCT/IE	3/304 an			99 ~			-			
	ΑO	Korean Office	Action	mailed April 23								
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Atty. Docket No. 33035M0341

**PATENT** 

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):

Kensaku Motoki, et al.

US Serial No.: 10/691,540

Group Art Unit: 1765

Filed: :

October 24, 2003

Examiner: To Be Assigned

For

GaN Single Crystal Substrate and Method of Making the Same

#### SECOND INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

- Sir:

Pursuant to the duty of disclosure under 37 C.F.R. 1.56, Applicants are enclosing an Information Disclosure Citation Form (PTO-1449) which lists the references cited in a Supplementary European Search Report issued for counterpart European Appln. No. EP 98 95 0452 dated February 19, 2004. In the Annex to the Search Report, U.S. Patent No. 5,970,314 is identified as a family member of EP 0 801 156. U.S. Patent Nos. 5,962,875 and 5,834,325 are identified as family members of EP 0 810 674. Accordingly, these three U.S. patents also are listed on the enclosed PTO-1449 form.

Applicants certify under 37 C.F.R. 1.97(e)(1) that all documents submitted herewith were first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement. Therefore, it is respectfully urged that no fees are required for the Examiner's consideration of the documents listed in this Information Disclosure Statement.

It is respectfully requested that the cited documents be considered by the Examiner in the aboveidentified patent application and that the cited documents be made officially of record therein. It is further requested that a listing of the same appear on the face of any patent which may issue from this application.

> Respectfully submitted, SMITH, GAMBRELL & RUSSELL, LLP

Michael A. Makuch, Reg. No. 32,263

1850 M Street, NW, Suite 800 Washington, D.C. 20036

Telephone: (202) 263-4300

Date: April 1, 2004

Atty. Dkt. No. 033035M0341

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:

Kensaku Motoki, et al.

Serial No.:

To Be Assigned

Art Unit: To Be Assigned

Filed:

Herewith

Examiner: To Be Assigned

For :

GaN SINGLE CRYSTAL SUBSTRATE AND METHOD

OF MAKING THE SAME

# INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. § 1.56, Applicants are enclosing an Information Disclosure Citation Form (PTO-1449).

These documents were cited by the Examiner and the Applicants during prosecution of the predecessor application 09/560,818 filed April 28, 2000. No copies of the documents are necessary in accordance with 37 C.F.R. §1.98(d).

Applicants respectfully ask that each of these documents be made officially of record in this application, and that a listing of the same appear on the face of any patent which may issue from this application.

Respectfully submitted, SMITH, GAMBRELL & RUSSELL, LLP

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Washington, D.C. 20036 Telephone: (202) 263-4300 Facsimile: (202) 263-4329

October 24, 2003



#### PATENT

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Kens

Kensaku MOTOKI, et al.

Serial No.:

10/691,540

Group Art Unit: 1722

Filed:

October 24, 2003

Examiner: Matthew J. Song

For:

GaN SINGLE CRYSTAL SUBSTRATE AND METHOD OF MAKING

THE SAME

# INFORMATIONAL DISCLOSURE LETTER

Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450

Sir:

Applicants request the Examiner's attention to two documents cited in an Office Action (dated September 19, 2006) in their copending divisional application. The documents listed in such Office Action are being submitted herewith and listed on an enclosed Information Disclosure Citation Form (PTO-1449).

Respectfully submitted,

SMITH, GAMBRELL & RUSSELL, LLP

By:

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Date: November 3, 2006

By